AMENDMENTS TO THE CLAIMS

A complete listing of all claims in the application is provided below with the requested amendments marked.

1. (Original)   A vehicle cooler for cooling a flow of primary air from a first temperature to a second temperature and delivering at least a portion of the primary air at the second temperature to a vehicle interior, the vehicle cooler comprising:

a first surface for cooling the primary air;

a second surface for humidifying a flow of secondary air by evaporation of liquid from the surface; and

a plurality of heat transfer elements for transferring heat from the first surface to the second surface;

wherein the second temperature is below a wet bulb temperature of the primary air.

2. (Original)   The vehicle cooler according to claim 1, further comprising a flow channel from the first surface to the second surface and wherein the secondary air comprises a portion of the primary air separated from the flow of primary air after cooling by the first surface.

3. (Original)   The vehicle cooler according to claim 1, wherein the first and second surfaces are located on opposite surfaces of a heat exchange membrane.

4. (Original)   The vehicle cooler according to claim 3, wherein the primary air flows over the first surface in a first direction and the secondary air flows over the second surface in a second direction substantially opposite to the first direction.

5. (Original)   The vehicle cooler according to claim 3, wherein the heat transfer elements extend outwardly from the heat exchange membrane to increase an effective surface area thereof.

6. (Original)   The vehicle cooler according to claim 5, wherein the heat conducting elements are metal fins generally aligned with a direction of air flow.

7. (Original)   The vehicle cooler according to claim 1, wherein the second surface comprises a liquid retaining layer for retaining a liquid to be evaporated.

8. (Original)   The vehicle cooler according to claim 1, wherein the secondary air is cooled to a temperature below the first temperature prior to humidifying at the second surface.

9. (Original) The vehicle cooler according to claim 1, further comprising a housing for containing the first and second surfaces and including flow channels for directing the flows of primary air and secondary air.

10. (Original) The vehicle cooler according to claim 9, wherein the housing is aerodynamically shaped for attachment to an exterior of a vehicle and an outlet from the housing for primary air is arranged to engage with a corresponding opening into an interior of the vehicle.

11. (Original) A method of cooling the interior habitable space of a vehicle comprising:

passing a flow of primary air over a first surface to cool the primary air from a first temperature to a second temperature below the wet bulb temperature of the primary air;

conducting heat from the first surface to a second surface;

supplying water to the second surface;

passing a first portion of the flow of primary air over the second surface to absorb water from the second surface; and

supplying a second portion of the primary air at the second temperature to the interior living space of the vehicle.

12. (Original) The method according to claim 11, wherein the water is supplied to the second surface intermittently.

13. (Original) The method according to claim 11, wherein the second surface is provided with a water retaining layer and the water is supplied to the water retaining layer.

14. (Original) The method according to claim 11, wherein a first portion of the primary air is supplied to the interior living space of the vehicle and a second portion of the cooled primary air is supplied to the second surface as the secondary air.

15. (Currently amended) A vehicle cooler for cooling ambient air and supplying the cooled air to a vehicle interior, the cooler comprising:

a housing having an inlet in communication with ambient air, an outlet in communication with the vehicle interior and an exhaust in communication with ambient air;

circulation means for circulating air through the housing;

a heat exchanger having a first channel communicating the inlet with the outlet and a second channel communicating with the exhaust;

a water distributor for supplying water to the second channel of the heat exchanger; and

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a bypass communicating an outlet end of the first channel with the second channel; and

a bypass control valve for controlling the relative size of the bypass with respect to the outlet

16. (Cancelled).

17. (Currently amended) A vehicle cooler for cooling ambient air and supplying the cooled air to a vehicle interior, the cooler comprising:

a housing having an inlet in communication with ambient air, an outlet in communication with the vehicle interior and an exhaust in communication with ambient air;

circulation means for circulating air through the housing;

a heat exchanger having a first channel communicating the inlet with the outlet and a second channel communicating with the exhaust;

a water distributor for supplying water to the second channel of the heat exchanger;

a bypass communicating an outlet end of the first channel with the second channel The vehicle cooler according to claim 15,

wherein the heat exchanger comprises a tubular membrane, the first channel being located in an interior of the tubular membrane and the second channel being located on an exterior of the tubular membrane, whereby heat transfer can take place between the two channels through the membrane and wherein the membrane comprises aluminium.

18.(Cancelled)

19. (Currently amended)   The vehicle cooler according to claim 1817, wherein the membrane is provided with heat conducting fins protruding into the first and second channels.

20. (Original) The vehicle cooler according to claim 19, wherein the fins in the second channel are partially coated with a water retaining layer.

21. (New)   The vehicle cooler according to claim 19, wherein the fins are provided with louvers.

22. (New)   The vehicle cooler according to claim 6, wherein the fins are provided with louvers.

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